

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 14-02-2005		2. REPORT TYPE FINAL		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE TRANSFORMING PRINCIPLES: MODERN IRRELEVANCE OF THE PRINCIPLE OF MASS				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) BURNEY, WILLARD C. Paper Advisor (if Any): I				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Joint Military Operations Dept Naval War College 686 Cushing Road Newport, RI 02841-1207				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution Statement A: Approved for public release; Distribution is unlimited.					
13. SUPPLEMENTARY NOTES A paper submitted to the faculty of the NWC in partial satisfaction of the requirements of the JMO Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.					
14. ABSTRACT The present focus on transformation of the U.S. military instigates a dialogue regarding current and future relevance of historically accepted principles of war. This essay addresses one of those principles—mass—and the evolution of conditions that have eroded its relevance in modern warfare. The thesis of this paper is that the principle of mass is no longer applicable to contemporary armed conflict and should be discarded in favor of existing and emerging concepts which are germane. Part 1 traces the historical genesis of the principle to the Napoleonic era. The development of mass is discussed supporting a basic definition: <i>concentrate</i> combat power at the decisive point in space and time. Part 2 discusses modern changes affecting the principles of war in terms of weaponry, the nature of the enemy, and a shift in priorities with respect to the operational factors of force, space, and time. Recent examples of armed conflict are examined supporting the eroded relevance of mass in favor of the concepts of <i>precision engagement</i> , <i>dispersion</i> of forces, <i>mobility</i> and <i>flexibility</i> —all within a context of <i>real-time unity of effort</i> . Finally, Part 3 examines current doctrine and the visionary documents guiding transformation of U.S. military forces. Current doctrine is found to have a reluctance to let go of the principle of mass despite the fact that attempts to rewrite the definition of mass tacitly reveal the changes discussed in Part 2 and the resulting erosion of the principle's relevance. Recent visionary documents from the Secretary of Defense, the Joint Chiefs, and the Office of Force Transformation distance themselves from the principle of mass and, in fact, make reference to the pertinent concepts as derived in Part 2. Nevertheless, they still contain some "mass-infused" wording that allows perception of some remaining applicability. The conclusions drawn are that the principle of mass has, indeed, lost modern relevance, and that all references to it should be discarded in modern strategy, doctrine, and visionary documents in deference to discussion and developments of the above noted concepts.					
15. SUBJECT TERMS PRINCIPLES OF WAR; MASS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 23	19a. NAME OF RESPONSIBLE PERSON Chairman, JMO Dept
a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED	c. THIS PAGE UNCLASSIFIED			19b. TELEPHONE NUMBER (include area code) 401-841-3556

**NAVAL WAR COLLEGE
Newport, RI**

**TRANSFORMING PRINCIPLES:
MODERN IRRELEVANCE OF THE PRINCIPLE OF MASS**

By

**WILLARD C. BURNEY
LCDR, USN**

**A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.
The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.**

Signature: _____

14 FEB 2005

Abstract

The present focus on transformation of the U.S. military instigates a dialogue regarding current and future relevance of historically accepted principles of war. This essay addresses one of those principles—mass—and the evolution of conditions that have eroded its relevance in modern warfare. The thesis of this paper is that the principle of mass is no longer applicable to contemporary armed conflict and should be discarded in favor of existing and emerging concepts which are germane. Part 1 traces the historical genesis of the principle to the Napoleonic era, citing initial adherents Clausewitz and Jomini. The development of mass is discussed supporting a basic definition: *concentrate* combat power at the decisive point in space and time. Part 2 discusses modern changes affecting the principles of war in terms of weaponry, the nature of the enemy, and a shift in priorities with respect to the operational factors of force, space, and time. Recent examples of armed conflict are examined supporting the eroded relevance of mass in favor of the concepts of *precision engagement*, *dispersion* of forces, *mobility* and *flexibility*, all within a context of *real-time unity of effort*. Finally, Part 3 examines current doctrine and the visionary documents guiding transformation of U.S. military forces. Current doctrine is found to have a reluctance to let go of the principle of mass despite the fact that attempts to rewrite the definition of mass tacitly reveal the changes discussed in Part 2 and the resulting erosion of the principle's relevance. Recent visionary documents from the Secretary of Defense, the Joint Chiefs, and the Office of Force Transformation distance themselves from the principle of mass and, in fact, make reference to the pertinent concepts as derived in Part 2. Nevertheless, they still contain some “mass-infused” wording that allows perception of some remaining applicability. The conclusions drawn are that the principle of mass has, indeed, lost modern relevance, and that all references to it should be discarded in modern strategy, doctrine, and visionary documents in deference to discussion and developments of the above noted concepts.

Table of Contents

Introduction	1
Part 1 - Historical Background	1
Part 2 - Evolutionary Changes	4
- Advances in Weaponry	4
- The Asymmetric Enemy	9
- Force, Space, and Time Factors	12
Part 3 - Current Doctrine and Visionary Documents	13
Conclusion	17
Bibliography	18

Introduction

The present focus on transformation of the U.S. military instigates a dialogue regarding current and future relevance of historically accepted principles of war. This essay addresses one of those principles—mass—and the evolution of conditions that have eroded its relevance in modern warfare. The thesis of this paper is that the principle of mass is no longer applicable to contemporary armed conflict and should be discarded in favor of existing and emerging concepts which are germane. As the various doctrinal principles of war are naturally interrelated, other principles are touched upon as they relate, reinforce, or oppose the principle of mass. Part 1 delves into the historical genesis and development of the principle. Part 2 discusses modern changes affecting the principles of war in terms of weaponry, the nature of the enemy, and a shift in priorities with respect to the operational factors of force, space, and time. Finally, Part 3 examines how (and if) mass is treated by current doctrine as well as the visionary documents guiding transformation of U.S. military forces.

Part 1 - Historical Background

A basic definition of *mass* is required to begin an analysis of its origins and development. In Definitions and Doctrine of Military Art, military historian John I. Alger sums up the principle of mass with the following dictum: “Concentrate combat power at the decisive place and time.”¹ This principle had its formal genesis in the Napoleonic era,² at which time “combat power” was synonymous with armies or troops in general. Napoleon himself expressed this principle—without naming it—in a letter to his brother Joseph during the Italy campaign: “I reiterate that you should for no reason divide your forces...[they should be] disposed in a

¹ John I. Alger, Definitions and Doctrine of the Military Art (Wayne, NJ: Avery Publishing Group Inc., 1985), 10.

² Certainly rudimentary elements of the tenets of mass can be found dating back as far as Sun Tzu, but the mature development of the theory did not truly emerge in written form until formalized principles of war became the fashion for military strategists in the eighteenth century.

manner that they may reunite in a day on the battlefield.”³ The term “mass” itself first appeared with regular usage in the writings of Prussian strategist Carl von Clausewitz—an avid admirer of Napoleon’s military art. In fact, of all the principles of warfare, Clausewitz held mass as preeminent. In his Principles of War, Clausewitz wrote, “The theory of warfare tries to discover how we may gain a preponderance of physical forces and material advantages at the decisive point.”⁴ While in the context of early nineteenth century warfare, Clausewitz is certainly alluding to a preponderance of troop strength, his prescient use of “physical forces and material advantages” anticipates advances in armaments and paves the way to Alger’s broader “combat power.”

The “decisive point” mentioned by Clausewitz is an important element of the historical definition of mass. The mere concentration of one’s forces was not enough to achieve victory unless it could be aimed at the correct point in space and time. Indeed, the ability to discern the decisive point of a campaign was the true mark of a talented military commander. In On War, Clausewitz writes, “Relative superiority, that is, the skillful concentration of superior strength at the decisive point, is much more frequently based on the correct appraisal of this decisive point, on suitable planning from the start.”⁵ Antoine Henri Jomini—who served as a general under Napoleon and, later, Tsar Alexander—parallels the thinking of Clausewitz on the principle of mass both in terms of preeminence and the significance of the decisive point. Jomini does not use the term mass but echoes precisely the substance thereof in what he calls

³ Napoleon Bonaparte to Joseph Bonaparte, 19 January 1806, Correspondance de Napoleon Ier, No. 9685, XI, 665; quoted in Douglas W. Leonard, Napoleon, De Gaulle and the Principles of War (Wright-Patterson AFB, OH: Air Force Inst. of Tech., 2000), 88.

⁴ Carl von Clausewitz, Principles of War (Harrisburg, PA: The Military Service Publishing Co., 1942), 12.

⁵ Carl von Clausewitz, On War (Princeton, NJ: Princeton University Press, 1976), 197.

the “one great principle [which] underlies all the operations of war.”⁶ In The Art of War, he elucidates this one great principle with four maxims, which include aspects of other historically accepted principles of war but center on the idea of mass and the decisive point:

1. To throw by strategic movements the mass of an army, successively, upon the decisive points of a theater of war, and also upon the communications of the enemy as much as possible without compromising one’s own. 2. To maneuver to engage fractions of the hostile army with the bulk of one’s forces. 3. On the battlefield, to throw the mass of the forces upon the decisive point, or upon that portion of the hostile line which it is of the first importance to overthrow. 4. To so arrange that these masses shall not only be thrown upon the decisive point, but that they shall engage at the proper times and with ample energy.⁷

One can infer from Jomini’s maxims another key element to the principle of mass: focusing massed forces in specific relation to the enemy in addition to space and time. Various historical strategists are not in agreement, either in terminology or theory, with what exactly that enemy focal point should be. Clausewitz focuses on an enemy’s *center of gravity*,⁸ while Jomini implies a more indirect focus on the enemy’s flanks and communications.⁹ Regardless, it is important to note that in nineteenth century warfare, this focal point was mainly some tangible aspect of the enemy’s forces (e.g., some portion of the enemy’s line or flank, or some position or fortification). As Clausewitz states, “We must select for our attack one point of the enemy’s position (i.e., one section of his troops - a division, a corps) and attack it with great superiority....”¹⁰

⁶ Antoine Henri Jomini, The Art of War (Harrisburg, PA: The Military Service Publishing Co., 1947), 67.

⁷ Ibid.

⁸ Clausewitz, On War, 484-487.

⁹ Jomini, 68, 100-117.

¹⁰ Clausewitz, Principles, 21.

Part 2 - Evolutionary Changes

In the dawning years of the twenty-first century, a number of changes in methods, participants, and conditions of modern warfare have diminished the relevance of the principle of mass. These changes, for the most part, have been evolutionary rather than revolutionary. They fall into three main interrelated spheres: advances in weaponry, an increasingly asymmetric enemy, and a shift in priorities vis-à-vis the factors of force, space, and time.

Advances in Weaponry

Throughout history, developments in armaments have had profound effects on military operations, the most profound impinging upon those commanders least adept at adapting their strategy and tactics to accommodate such advances. The most momentous weaponry improvements have been in two areas: precision and power. Further, lack of one could often be overcome by superiority in the other. Such compensation was the inherent driving force behind development of the principle of mass. Lacking a weapon with credible precision prior to mass production of the rifle in the mid-nineteenth century, armies overcame this shortcoming with the sheer power of mass numbers. To paraphrase Lt. Col. Robert Leonhard in Principles of War for the Information Age, mass was necessary since there was less than a one-to-one soldier-to-kill ratio.¹¹

Precision of weapons has continually been improved over the years, diminishing the need to mass forces for the purpose of blunt application of power. Ironically, in fact, massing forces has increasingly become detrimental because they become vulnerable in the face of more accurate and precise weapons. Leonhard again writes, “On the friendly side, there is no need

¹¹ Robert R. Leonhard, The Principles of War for the Information Age (Novato, CA: Presidio Press, 1998), 98-102.

for mass, because a smaller group of weapons can kill many targets. On the enemy side, mass becomes a liability, providing the enemy with convenient and lucrative targets.”¹²

The logical counter to this vulnerability is more *dispersed* forces as well as greater *mobility*. Lack of mobility has always been one of the major drawbacks of massed forces. Therein lies the classic tension between the principles of *mass* and *maneuver*. Forces must be maneuvered in order to converge (i.e., mass) upon the decisive point at the proper time; however, massed forces have an inherent inertia which hinders maneuverability, particularly when geography or topography is less than cooperative. Modern advances in precision engagement capability nullify the necessity for mobile, dispersed forces to ultimately mass in order to deliver an efficacious blow. An Army report on Operation *Enduring Freedom* in Afghanistan substantiates this assertion: “...the soldiers of the U.S. Army, assisted by the Air Force, Navy, and Marines, proved that the application of discrete military power, regardless of geographical obstacles, could have an impact far out of proportion to the number of forces on the ground.”¹³

The counterpoised nature of precision and mass is not limited to ground forces. Mass application of force of all types has gradually been trumped by the ability to apply force with incisive precision. For example, the advent of combat aircraft, specifically bombers, caused an extraordinary paradigm shift in the principle of *maneuver*, and tremendously expanded the “battlefield.” Yet, in terms of force application, the early accuracy of airborne weapons was such that mass employment of those weapons remained a requirement for decisive effect (e.g., World War II carpet bombing). More recent advances in technology, however, have begun to eat away at the need for this flavor of mass as well. This has been dramatically demonstrated in

¹² Ibid., 102.

¹³ Center of Military History, The U.S. Army in Afghanistan: Operation Enduring Freedom October 2001-March 2002, CMH Pub 70-83-1 (Washington, DC: 2003), 45.

recent conflicts as the use of *precision weapons* such as laser-guided and GPS-guided bombs and missiles has become more prevalent. Referring to the first Gulf War, Australian Air Marshall David Evans states, “In Desert Storm, the principles of mass and manoeuvre were given new meaning. The coalition’s advantages in stealth and precision guided munitions dramatically changed how we conducted the war...Precision guided weapons allowed us to produce mass effects at the desired, decisive point.”¹⁴

This idea of “mass effects” has been gaining momentum in recent years. It alludes to another advantage of precision weapons over mass force application. Both methods achieve the same end: some desired effect against the enemy (e.g., destruction of a target). But precision weapons minimize undesired effects (e.g., collateral damage to non-combatants). Col. Walter Boyne observes in his history of Operation *Iraqi Freedom*,

By March 21, it was evident that far from “Shock and Awe” the war was going to be fought as an Effects Based Operation (EBO)...EBO calls for focusing on certain desired objectives and determining how to employ weaponry to achieve those objectives rather than simply employing weapons to destroy targets. An EBO campaign is congruent with a campaign designed to minimize collateral damage. It ensures that the desired goal (destruction of the integrated enemy air-defense system, elimination of missiles, etc.) is achieved not by obliterating all of the elements in a carpet bombing campaign but instead by taking out the key components without which the system will not function.¹⁵

Juxtaposed to precision weapons capability is the second major technological area of weapons development: sheer power. In this category fall the various weapons of mass destruction (WMD): nuclear, biological, and chemical. These types of weapons are capable of achieving astounding mass effects (desired *and* undesired) in and of themselves. Their use, and even the possibility of their use, greatly amplifies the vulnerability aspect of massed forces

¹⁴ David Evans, War: A Matter of Principles (Ipswich, England: The Ipswich Book Co. Ltd., 1997), 79.

¹⁵ Walter J. Boyne, Operation Iraqi Freedom: What Went Right, What Went Wrong, and Why (New York: Tom Doherty Associates, 2003), 54.

mentioned earlier. In his recollections of Operation *Desert Storm*, Gen. Norman Schwarzkopf writes,

You can take the most beat-up army in the world, and if they choose to stand up and fight, you're going to take casualties; if they choose to dump chemicals on you, they might even win...My nightmare was that our units would reach the barriers in the very first hours of the attack, be unable to get through, and then be hit with a chemical barrage...The possibility of mass casualties from chemical weapons was the main reason we had sixty-three hospitals, two hospital ships, and eighteen thousand beds ready in the war zone.¹⁶

Schwarzkopf's concerns were not unfounded. Richard Butler, Executive Director of UNSCOM¹⁷ in the late 1990s, says of Iraq's chemical weapons capabilities, "A missile warhead of the type Iraq had made and used can hold some 140 liters of VX [nerve gas]...A single such warhead would contain enough of the chemical to kill up to 1 million people."¹⁸

Advances in this area of weaponry are not late-breaking. In fact, the most dramatic innovations in the power of modern weapons occurred in the early to mid-twentieth century. Chemical weapons were used in World War I, and nuclear weapons in World War II. Yet, for many years, widespread use of such weapons was held in check by a number of factors. Nuclear weapons were isolated to the inventory of a handful of players, and the Cold War threat of mutually-assured destruction deterred those players from instigating their use. With exceptions (e.g., Iraqi use of chemical weapons against the Iranians and Kurds), states largely refrained from chemical and biological weapons use due to a combination of 1) fear of retaliation in kind from their enemies, and 2) the complications of provision and use of the necessary protective gear for their own forces. Both of these are likely reasons why Iraq did not use chemical weapons against coalition forces in either Gulf War. In their account of the first

¹⁶ H. Norman Schwarzkopf, *It Doesn't Take a Hero* (New York: Bantam Books, 1993), 509.

¹⁷ United Nations Special Commission for the disarmament and monitoring of Iraq established in 1991 at the conclusion of the first Gulf War.

¹⁸ Richard Butler, *The Greatest Threat* (New York: Public Affairs, 2000), 7-8.

Gulf War, The Generals' War, Michael Gordon and Gen. Bernard Trainor noted, "Many of Iraq's ground forces in fact had shoddy chemical-protective gear and were ill-equipped to survive on a chemical battlefield."¹⁹

The protective circumstances have changed. Bi-polar Cold War conditions no longer exist. Advances in information-sharing have made WMD technology more widely available. Additionally, the material elements for WMD are increasingly accessible. America's Achilles Heel, a product of the Belfer Center for Science and International Affairs at the Harvard Kennedy School of Government, states:

First, the range of non-state actors capable of acquiring and using NBC [nuclear, biological, chemical] weapons is clearly increasing. This trend results from broad phenomena, particularly the expansion of the social knowledge base and the increasing ease of access to information, as well as from specific NBC-related developments, such as the erosion of the Soviet nuclear custodial system.²⁰

While "non-state" actors are singled out in this context, the trend also applies to states.

Furthermore, the potential will of states to use WMD is assessed to be growing:

An array of motives might drive states to acquire and to use nuclear, biological, or chemical weapons: compensation for the loss of superpower patronage; deterrence of a much more powerful adversary, such as the United States, or of its coalition partners; victory over a more powerful adversary on the battlefield; the temptation to 'decapitate' an opposing government by killing its senior officials, thus weakening its ability to respond; the desire to weaken an adversary's economic strength or political will; or simply the urge to exact revenge.²¹

The sum effect of the emerging potentialities for WMD use is an austere shift in priority toward *force protection* and the doctrinal principle of *security*, both of which are at odds with the classic principle of mass as related to forces.

¹⁹ Michael R. Gordon and Bernard E. Trainor, The Generals' War (Boston: Little, Brown, and Co., 1995), 353.

²⁰ Richard A. Falkenrath, Robert D. Newman, and Bradley A. Thayer, America's Achilles Heel (Cambridge, MA: MIT Press, 1998), 169.

²¹ Ibid., 11.

The Asymmetric Enemy

One facet of the nature of recent, present, and potential enemies that dominates current military discussion is the idea of “asymmetry.” An initial definition is stated by Col. Charles Dunlap in his article entitled “Preliminary Observations: Asymmetric Warfare and the Western Mindset”: “In broad terms it [asymmetric warfare] means warfare that seeks to avoid an opponent’s strengths; it is an approach that tries to focus whatever may be one side’s comparative advantages against its enemy’s relative weaknesses.”²² Once again, there is nothing new in the idea of asymmetry. In fact, one might say that the principle of mass is itself an asymmetric concept. After all, none of the strategists who promote it advocate mass versus mass. On the contrary, in various versions the idea has always been pitting the whole against a part, superior against inferior, strength against critical weakness. Yet, asymmetry in the modern military context finds its significance and danger in unconventional application.

The most common military application of asymmetry, one that is routinely adopted by an inferior opponent, is guerilla warfare. There is no lack of historical examples—from American colonists to Che Guevara to the Mujahideen. Yet, its repeated effect is to frustrate military commanders who try to meet it with the principle of mass—from the British redcoats to Batista’s army to the Soviet military machine. First, guerilla warfare disrupts classic mass strategy by refusing battle and thereby denying decisive points. The Russian General Staff, in its after-action analysis of Soviet military operations in Afghanistan writes:

...the enemy, having suffered heavy losses, was switching to guerilla tactics and moving into the mountains. Principally, these tactics consisted of avoiding combat with superior Soviet forces; conducting surprise action against small groups; and refusing to fight conventional, positional warfare while conducting widespread maneuver using autonomous

²² Charles J. Dunlap Jr., “Preliminary Observations: Asymmetrical Warfare and the Western Mindset” in Challenging the United States Symmetrically and Asymmetrically: Can America be Defeated?, ed. Lloyd J. Matthews (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, 1998), 1.

groups and detachments...Under these circumstances, the Soviet forces *attempted* to conduct “combat operations” with a clear superiority in forces and means.²³

The Soviets eventually adapted their own tactics, becoming more effective against the Mujahideen, but not before the political will of the Soviet government had been exhausted.

Second, guerilla forces tend to lack tangible *centers of gravity* at which to direct mass attacks, further defying the traditional notion of mass. Likewise, the objectives of guerilla warfare focus on the non-tangible. Che Guevara notes in his Guerilla Warfare,

He [the enemy] will have to achieve the total destruction of each one of the components of the guerilla band. The guerilla fighter, on the other hand, must analyze the resources which the enemy has for trying to achieve that outcome: the means in men, in mobility, in popular support, in armaments, in capacity of leadership on which he can count. We must make our own strategy adequate on the basis of these studies, keeping always in mind the final objective of defeating the enemy army.²⁴

The guerilla warrior defeats the enemy army through a protracted war of attrition or by ultimately eroding the political will of the enemy and his stomach for continued fighting. The Russian General Staff alludes to both sides of this “non-tangible” element as instrumental in the Soviet defeat in Afghanistan:

During its entire sojourn, the Soviet forces in Afghanistan compellingly demonstrated the results of the lack of political support for its actions by the government of the USSR. When the highest political leaders of the USSR sent its forces into this war, they did not consider the historic, religious, and national particularities of Afghanistan. After the entry, these particulars proved the most important factors as they foreordained the long and very difficult nature of the armed conflict.²⁵

This discussion segues into probably the most treacherous type of asymmetry which has lately emerged onto the world stage: asymmetry of moral and ethical values. Colonel Dunlap writes:

²³ Russian General Staff, The Soviet-Afghan War: How a Superpower Fought and Lost, trans. and ed. Lester W. Grau and Michael A. Gress (Lawrence: University Press of Kansas, 2002), 13 [Emphasis added].

²⁴ Ernesto Guevara, Guerilla Warfare, 3rd ed. (Wilmington, DE: Scholarly Resources Inc., 2001), 55.

²⁵ Ibid., 304.

Enemies may perceive vulnerable asymmetries in what the West views as its virtues. While the mindset in the United States and the West sees...the “moral strengths” and the “ethical standards” of its troops as keys to military power, adversaries willing to abandon Westernized legal and ethical regimes may well consider them as things to exploit and manipulate. Increasingly, opponents will seek to present Western militaries with moral and ethical conundrums.²⁶

Simply put, the enemy refuses to play by the rules. He denies any jurisdiction of international law and has no scruples about committing war crimes. Recent examples include using human shields to defend military targets (e.g., in Kosovo, Somalia, and Iraq), basing weapons and operations out of protected structures (e.g., mosques, hospitals in Iraq), and deliberately attacking non-combatants, innocent bystanders, civilians, women, and children. Massed force is impotent against such measures, and, in fact, may play into the opponent’s hand. Colonel Dunlap continues:

Where once the “Western way of war” meant that adversaries risked wars often characterized by decisive battles where the annihilation of enemy forces was sought, today we see the emergence of a Western mindset markedly more sensitive to casualties on both sides. Enemies may consider this humanitarian concern as yet another asymmetry on which they can capitalize in ways the Western mindset consider unthinkable: they may purposely put their own people in jeopardy if doing so complicates or adversely affects the West’s use of its military power.²⁷

This is precisely the sort of asymmetry that is employed by terrorists. Terrorist networks, such as Al Qaeda and other non-state entities, present the same types of complications to the military solution as guerilla forces but to an even greater degree, as they often cannot be even regionally localized. Additionally, the common terrorist tactic of suicide attack often precludes any possibility of retaliation. How does one hurt an enemy who holds no value for his own life, let alone the lives of anyone else? Such a mindset is even more disconcerting when combined with the earlier discussion of WMD. As noted in America’s Achilles Heel, “Covert attacks on

²⁶ Dunlap, 7.

²⁷ Ibid., 7-8.

civilian populations may be more effective than military attacks in causing panic and sapping political will. Covert delivery may allow attackers to escape identification and retaliation, making it possible to attack an enemy and escape retribution.”²⁸

Force, Space, and Time Factors

Clearly, an asymmetric enemy, increasingly the predominant threat, is a tough military problem. If mass offers no potency, what principles can be applied? To answer, one must analyze how the changes discussed relate to the operational factors of force, space, and time.²⁹ Under the classic principle of mass, *force* and *space* were the primary driving factors in that superior forces had to be maneuvered in space to successfully converge upon the decisive point. Obviously, time played a part as well, but it was generally critical in terms of days or even months. In modern warfare, emphasis has shifted to *time* and *space* factors due to advances in force application capabilities and key characteristics of an increasingly asymmetric enemy.

Priorities within the factor of space itself have also shifted over time due primarily to a systematic widening of the battlespace and enemy dispersion to capitalize on asymmetric advantages. The widening of the battlespace has happened on an ever-increasing scale as advances in weapons, platforms, and information-sharing abilities have been made. This, combined with an enemy determined to disperse and conceal his centers of gravity (potentially on a global scale concerning non-state enemies), requires adaptation to much more widely distributed forces with greater *mobility* and *flexibility*. Such forces can then seek out and strike the enemy’s various nodes and, thus, indirectly affect his elusive centers of gravity.

²⁸ Falkenrath, Newman, and Thayer, 218.

²⁹ Broad discussion of the operational factors of *force*, *space*, *time*, and *information* and the inter-relationships between in Milan N. Vego, Operational Warfare (Newport, RI: Naval War College, 2000), 29-93.

A related and inseparable *time* factor exists due to the mobility of the enemy. *Information* (sometimes referred to as the fourth operational factor)³⁰ ties in as an essential requirement to locate enemy critical nodes and orchestrate friendly forces that are best positioned to act quickly and decisively before the enemy can adjust. In this way, friendly forces can disrupt the enemy's decision cycle—or OODA loop if one prefers.³¹ It is through such real-time *unity of effort* that the difficulties posed by an asymmetric threat can be overcome. Historian and strategist Norman Friedman describes this notion in reference to U.S. operations in Afghanistan against the Taliban:

The new style of warfare emphasizes quick operations to upset an enemy's timetable and, ideally, to drive him to a collective nervous breakdown. One hope is that a relatively few weapons, intelligently employed, can collapse an enemy. Clearly the older-style alternative, to bring mass forces and mass weaponry to bear, was impossible in Afghanistan....³²

Part 3 - Current Doctrine and Visionary Documents

The analysis in Part 2 reveals an obligatory shift in emphasis toward the concepts of *precision engagement*, *dispersion* of forces, *mobility*, and *flexibility*, all of which are diametrically opposed to the principle of mass. Yet, a study of current, newly rewritten doctrines finds the enduring presence of the principle of mass. Granted, at least in the joint publications, all of the principles of war have been rendered to appendices, perhaps betraying an inability of the authors to juxtapose some of the principles (particularly mass) to transformed strategies.

³⁰ Ibid., 95-103.

³¹ In depth description and analysis of John Boyd's OODA (Observe, Orient, Decide, Act) loop in David S. Fadok, "John Boyd and John Warden: Airpower's Quest for Strategic Paralysis" in The Paths of Heaven, the Evolution of Air Power Theory, ed. Philip Meilinger (Maxwell AFB, AL: Air University Press, 1997), 363-370.

³² Norman Friedman, Terrorism, Afghanistan, and America's New Way of War (Annapolis, MD: Naval Institute Press, 2003), 212.

Another give away to their diminished validity is the attempts at redefinition. This can be vividly seen in Army doctrine. Field Manual 3-0 (which superseded FM 100-5) defines mass in its initial header as follows, “Mass: Concentrate the effects of combat power at the decisive place and time.”³³ This is essentially the same as the classic definition except that it adopts some of the *effects-based* terminology discussed in Part 2. Problems arise, however, in the supporting paragraphs. The description begins, “Commanders mass the effects of combat power to overwhelm enemies or gain control of the situation.”³⁴ This is still familiar, as it strays little from Clausewitz’s decisive point. But the subsequent breakdown of massing in time and massing in space gets a little hazy. “Massing in time applies the elements of combat power against multiple targets simultaneously. Massing in space concentrates the effects of different elements of combat power against a single target...To an increasing degree, joint and Army operations mass the full effects of combat power in both time and space, rather than one or the other.”³⁵ Now this is confusing. The definition of massing in time sounds like dispersed force rather than concentration. Even if that stretch is allowed, the two definitions (massing in time and massing in space) appear to be mutually exclusive. Yet, the final statement implies that both can be employed simultaneously. This confusing rhetoric continues in the next paragraphs, describing how forces can mass effects without concentrating forces—180 degrees out from the classic definition. The remainder of the description discusses “swift and fluid maneuver” and “simultaneous, nonlinear operations,”³⁶ which seem more applicable to the principle of *maneuver*. Furthermore, they support the concept of *dispersed* forces, which is the

³³ Department of the Army, Operations, Field Manual No. 3-0 (Washington, DC: 2001), IV-13.

³⁴ Ibid.

³⁵ Ibid.

³⁶ Ibid.

inverse of the classic notion of mass. The effect of all the conflicting explanation is to turn the principle on its head, thereby rendering it meaningless.

The joint publications are less verbose and, thus, interject less bewilderment. But they too contain similar conflicting statements and make reference to “massing effects, rather than concentrating forces...”³⁷ There is an obvious reluctance to let go of this austere, time-honored term. Therefore, the definition has been rewritten in an attempt to address the changes discussed in Part 2 such that it no longer even resembles the original principle.

Fortunately, the inertia of weighty doctrine does not extensively carry over to national strategic guidance or the majority of visionary documents that are steering the transformation of today’s forces. There are some remnants of perplexed mass concepts and some “mass-infused” compound words, but these documents generally avoid these principles altogether. In fact, they often contain at least fragments, if not developed examples of the pertinent concepts deduced in Part 2.

The Secretary of Defense, in his Quadrennial Defense Review release in 2001, alluded to some of the pertinent concepts discussed earlier above in one of his six “critical operational goals” for transformation: “Denying enemies sanctuary by providing persistent surveillance, tracking, and rapid engagement with high-volume *precision strike*, through a combination of complementary air and ground capabilities, against critical mobile and fixed targets at various ranges and in all weather and terrains.”³⁸ The Secretary also addresses the idea of *dispersion* in

³⁷ Joint Chiefs of Staff, Joint Warfare for the Armed Forces of the United States, Joint Pub 1 (Washington, DC: 14 November 2000), B-1; identical text in Joint Chiefs of Staff, Doctrine for Joint Operations, Joint Pub. 3-0 (Washington, DC: 10 September 2001), A-1.

³⁸ Department of Defense, Quadrennial Defense Review Report (Washington, DC: 30 September 2001), 30 [Emphasis added].

his Transformation Planning Guidance under the headings of “De-massed Forces” and “Dispersed Forces.”³⁹

The National Military Strategy steers clear of mass as a principle of war, substituting instead what it calls “overmatching power”: “Overmatching power is the *precise application of combat power* to foreclose enemy options and rapidly seize the initiative to achieve conclusive victories.”⁴⁰ Also emanating from the Joint Chiefs, Joint Vision 2020, in its operational concepts, directly speaks to “Precision Engagement” and indirectly addresses the ideas of *dispersion, mobility, and flexibility* in its description of “Dominant Maneuver.”⁴¹

One common thread in the majority of these documents is reference to “network-centric warfare (NCW).”⁴² While often tending to bog down in technical and technological weeds, this concept is supportive of the ideas of *dispersion* and *real-time unity-of-effort*. NCW is praised as one of the key properties of the future military in the Office of Force Transformation’s primer, Elements of Defense Transformation: “Although the concept of what the future force will look like and how it will conduct military operations is still evolving, two salient characteristics seem to stand out: (1) It will be a joint, network-centric force; and (2) It will be capable of executing effects-based operations (EBO), enabled by NCW.”⁴³

³⁹ Department of Defense, Transformation Planning Guidance (Washington, DC: April 2003), 32.

⁴⁰ Joint Chiefs of Staff, National Military Strategy of the United States of America 2004 (Washington, DC: 2004), 7 [Emphasis added].

⁴¹ Joint Chiefs of Staff, Joint Vision 2020 (Washington, DC: 30 May 2000), 20.

⁴² Synopsis of network-centric warfare in Office of Force Transformation, Network Centric Warfare: Creating a Decisive Advantage (Washington, DC: Winter 2003).

⁴³ Office of Force Transformation, Elements of Defense Transformation (Washington, DC: October, 2003), 8.

Conclusion

The above analysis demonstrates the lack of contemporary relevance of the principle of mass. Still, this notion finds a home in current service and joint doctrines. True, attempts have been made to update or modernize the definition of this principle, but such modifications clumsily twist the theory such that the descriptive discussions become confusing and contradictory. The result is a definition that, in itself, proves the irrelevance of the principle to modern warfare. This highlights some great reluctance to dispense with this long familiar term and, thus, force its applicability to modern doctrine. Such nostalgic focus detracts from concepts that are pertinent such as *precision engagement*, *dispersion* of forces, and increased *mobility* and *flexibility* all within the context of *real-time unity-of-effort*.

Visionary documents, guiding the transformation of the U.S. military tend to recognize the shifting priorities and emerging importance of the above concepts. Yet they still contain confusing, sometimes conflicting, “mass” terminology which seems to suggest the possibility of some remaining applicability of the principle. If the U.S. military is to suitably transform itself to counter the progressively more potent threat of asymmetric enemies with access to more powerful and precise weapons, this inertia must be overcome. The invalid principle of mass should be relegated to the history books to make room for emphasis and development of the above concepts which are currently relevant and must be the driving principles behind the development of tomorrow’s operational capabilities, strategy, and tactics.

Bibliography

- Alger, John I. Definitions and Doctrine of the Military Art. Wayne, NJ: Avery Publishing Group Inc., 1985.
- Boyne, Walter J. Operation Iraqi Freedom: What Went Right, What Went Wrong, and Why. New York: Tom Doherty Associates, 2003.
- Butler, Richard. The Greatest Threat. New York: Public Affairs, 2000.
- Center of Military History. The U.S. Army in Afghanistan: Operation Enduring Freedom October 2001–March 2002. CMH Pub. 70-83-1. Washington, DC: 2003.
- Clausewitz, Carl von. On War. Princeton, NJ: Princeton University Press, 1976.
- Clausewitz, Carl von. Principles of War. Harrisburg, PA: The Military Service Publishing Co., 1942.
- Dunlap, Charles J., Jr. "Preliminary Observations: Asymmetrical Warfare and the Western Mindset." In Challenging the United States Symmetrically and Asymmetrically: Can America be Defeated?, edited by Lloyd J. Matthews, 1-17. Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, 1998.
- Ellis, John. From the Barrel of a Gun: A History of Guerilla, Revolutionary and Counter-insurgency Warfare, from the Romans to the Present. London: Greenhill Books, 1995.
- Evans, David. War: A Matter of Principles. Ipswich, England: The Ipswich Book Co. Ltd., 1997.
- Fadok, David S. "John Boyd and John Warden: Airpower's Quest for Strategic Paralysis." In The Paths of Heaven: the Evolution of Air Power Theory, edited by Philip Meilinger, 363-370. Maxwell AFB, AL: Air University Press, 1997.
- Falkenrath, Richard A., Robert D. Newman, and Bradley A. Thayer. America's Achilles Heel. Cambridge, MA: MIT Press, 1998.
- Foch, Ferdinand. The Principles of War. New York: Henry Holt and Co., 1920.
- Freidman, Norman. Terrorism, Afghanistan, and America's New Way of War. Annapolis, MD: Naval Institute Press, 2003.
- Gordon, Michael R. and Bernard E. Trainor. The Generals' War. Boston: Little, Brown, and Co., 1995.

- Guevara, Ernesto. Guerilla Warfare. 3rd ed. Wilmington, DE: Scholarly Resources Inc., 2001.
- Hart, B. H. Liddell. Paris, or the Future of War. New York: E.P. Dutton & Co., 1925.
- Jomini, Antoine Henri. The Art of War. Harrisburg, PA: The Military Service Publishing Co., 1947.
- Keegan, John. The Iraq War. New York: Alfred A. Knopf, 2004.
- Leonard, Douglas W. Napoleon, De Gaulle and the Principles of War. Wright-Patterson AFB, OH: Air Force Inst. of Tech., 2000.
- Leonard, Roger A. A Short Guide to Clausewitz On War. London: Weidenfeld and Nicolson, 1967.
- Leonhard, Robert R. The Principles of War for the Information Age. Novato, CA: Presidio Press, 1998.
- Piatt, Walter E. Do the Principles of War Still Apply? Fort Leavenworth, KS: Army Command and General Staff College, 1998.
- Russian General Staff. The Soviet-Afghan War: How a Superpower Fought and Lost, translated and edited by Lester W. Grau and Michael A. Gress. Lawrence: University Press of Kansas, 2002.
- Schwarzkopf, H. Norman. It Doesn't Take a Hero. New York: Bantam Books, 1993.
- Tzu, Sun. Sun Tzu: The New Translation, translated and interpreted by J.H. Huang. New York: Quill, 1993.
- U.S. Department of the Army. Operations. Field Manual No. 3-0. Washington, DC: 2001.
- U.S. Department of Defense. Quadrennial Defense Review Report. Washington, DC: 30 September 2001.
- U.S. Department of Defense. Transformation Planning Guidance. Washington, DC: April, 2003.
- U.S. Joint Chiefs of Staff. Doctrine for Joint Operations. Joint Pub. 3-0. Washington, DC: 10 September 2001.
- U.S. Joint Chiefs of Staff. An Evolving Joint Perspective: U.S. Joint Warfare and Crisis Resolution in the 21st Century. Washington DC: 28 January 2003.

U.S. Joint Chiefs of Staff. Joint Doctrine for Military Operations Other Than War. Joint Pub. 3-07. Washington, DC: 16 June 1995.

U.S. Joint Chiefs of Staff. Joint Vision 2020. Washington, DC: 30 May 2000.

U.S. Joint Chiefs of Staff. Joint Warfare for the Armed Forces of the United States. Joint Pub. 1. Washington, DC: 14 November 2000.

U.S. Office of Force Transformation. Elements of Defense Transformation. Washington, DC: October, 2003.

U.S. Office of Force Transformation. Military Transformation: A Strategic Approach. Washington, DC: Fall, 2003.

U.S. Office of Force Transformation. Network-Centric Warfare: Creating a Decisive Advantage. Washington, DC: Winter, 2003.

Vego, Milan N. Operational Warfare. Newport, RI: Naval War College, 2000.